

Frequency of Accidents as Recorded In Family Surveys

Public Health Monograph No. 14 contains three studies of accident reports based on monthly visits to the homes of families living in certain blocks of the original Eastern Health District of Baltimore.

The first study pertains to the general aspects of accident frequency. The second indicates that more accidents occur in the home than in public places or at work, but the risk of accident per million hours spent in the home is much less than the risk in public places or at work. The third study suggests that persons with chronic disease have more accidents during a specified period of observation than those who are free from such diseases.

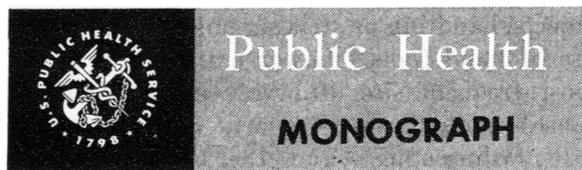
Part I. Accident Frequency by Specific Cause and by Nature and Site of Injury.
By Selwyn D. Collins, Ph.D., F. Ruth Phillips, and Dorothy S. Oliver.

Annual illness of all severities and from all causes amounted in this study to 1,379 cases per 1,000 population, of which 125 (9 percent) were due to accidents. Of the 2,690 injuries in the 5-year period, 1,110 (52 per 1,000) disabled the patient for one or more days and the other 1,580 (73 per 1,000) did not cause loss of time from usual activities such as work away from or at home, housekeeping, or attending school.

In terms of total and of disabling cases, falls and miscellaneous ill-defined accidents were the 2 most frequent of 10 external causes. In terms of total accidents, lacerations, and superficial injuries were the 2 most frequent of 9 kinds of injury.

Falls are an important cause of both fatal and nonfatal accidents; motor vehicle accidents only exceed falls in fatal accidents.

The highest accident frequency occurs among children. Under 35 years of age, rates were higher for males than for females, but above 35 the reverse was true.



No. 14

The accompanying summary covers the principal findings presented in Public Health Monograph No. 14, published concurrently with this issue of Public Health Reports. The authors are with the Division of Public Health Methods, Public Health Service.

Readers wishing the data in full may purchase copies of the monograph from the Superintendent of Documents, United States Government Printing Office, Washington 25, D. C. A limited number of free copies are available to official agencies and others directly concerned on specific request to the Public Inquiries Branch of the Public Health Service. Copies will be found also in the libraries of professional schools and the major universities, and in selected public libraries.

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Collins, Selwyn D., Phillips, F. Ruth, and Oliver, Dorothy S.: Accident frequency, place of occurrence, and relation to chronic disease. Public Health Monograph No. 14 (Public Health Service Publication No. 249). U. S. Government Printing Office, Washington, 1953.

A high proportion of all injuries involve some part of the head, particularly among children. In the ages under 5 years, head injuries occur three and five times as often among boys and girls, respectively, as the next most frequent site, hands and fingers. These injuries are mainly lacerations and superficial wounds rather than fractures.

The external cause of the accident was related to the nature and the site of the resulting injury. In nature of injury, fracture and joint injury combined was the highest category in four external causes of disabling accidents—motor vehicles, sports and recreation, falls, and miscellaneous external causes. Lacerations were highest in three external causes—falling objects, handling or striking objects, and in the use of hand tools. Lower extremity was the most frequent site of injury in five external causes—motor vehicle, sports and recreation, falls, falling objects, and other external causes; hands and fingers were the most frequent sites in three external causes—handling or striking objects, machinery, and in the use of hand tools.

All injuries of a given nature were examined to determine from which external cause they originated. Falls were either the first or second cause contributing to each of the four natures of injuries.

Part II. *Risk of Accident at Home, in Public Places, and at Work.* By Selwyn D. Collins, Ph.D.

Estimates of hours spent at home, in public places, and at work were made for the Baltimore surveyed population, with the aid of data from an intensive survey in Michigan. The observed accidents in the Baltimore group were classified by place of occurrence (home, public places, work), and accident frequency rates per million person-hours were computed for each of the three places. Such rates represent the risk of accident in each place rather than the volume of accidents.

According to the usual rates, which do not take account of the time spent in each place, home accidents in the Baltimore study were 27 percent above the simple average of accident rates in the three places; public and work accident rates were 8 and 19 percent, respectively,

below the average. When hours spent in each place are taken into account, the situation is practically reversed: the home accident rate is 41 percent below the simple average of the rates in the three places, with public-place and work accident rates 16 and 25 percent, respectively, above the average of the three rates.

Age adjusted frequency rates for all accidents per million person-hours for the ages 15 and over are lowest for home, next for public places, and highest for work accidents. Age-specific rates are reasonably consistent in indicating the same order according to the size of accident frequency rates. Children under 15 years and particularly under 5 years have extremely high frequencies of falls on sidewalks, streets, and other public places per million person-hours spent in such places. Women experience more home and public-place accidents, particularly falls, than men in the same places, but they experience fewer work accidents than men.

Rates of actual days of disability per million person-hours indicate the same general order of the results of accidents in the three places, that is, work accidents have the highest rates; public places, the next; and home, the lowest of the three.

Several indicators of the severity of accidents, such as the percentage of cases disabling for 1 day or longer, average days of disability per disabling accident, percentage of disabling accidents that had 100 or more days of disability, and the percentage of disabling accidents that were fatal, all indicate rather consistently that work accidents are generally most severe, public-place accidents next, and home accidents the least severe of the three groups.

Part III. *Relation of Chronic Disease and Socioeconomic Status to Accident Liability.* By Selwyn D. Collins, Ph.D.

This study deals with the relation of chronic disease and socioeconomic status to the frequency of accidents.

The presence of chronic disease apparently adds to the liability to accident for the individual afflicted with the disease. A consistently higher percentage of individuals who had

repeated accidents during a specified period had some chronic disease than was true of individuals who had no accidents. This statement is true not only for all chronic and all major chronic diseases combined, but is true also for important specific chronic diseases and to some extent for minor chronic diseases also.

Consideration of males and females separately shows the same relationship of chronic disease to accident frequency for each sex.

Data were available on accident frequency in relation to only a few socioeconomic factors. Annual accident frequency rates per 1,000 population and the percentage of individuals who

had repeated accidents within a given observation period were higher among manual workers of each sex than among professional-business-clerical workers.

Annual accident frequency rates per 1,000 population and the percentage of individuals who had repeated accidents within a given period were higher in the lowest income group than in the two higher income groups.

A higher percentage of individuals living in low-rent houses and of individuals living in low-value owned homes had repeated accidents than of those living in homes with higher rents or values.

Medical Research Fellowships and Grants

Awards for postdoctoral fellowships in cancer and medical research will be made in the early spring upon recommendation by the National Research Council. Applications for any of the following 1954-55 programs may be made by citizens of the United States, unless specifically noted, and must be mailed on or before December 10, 1953:

Cancer research fellowships, awarded by the American Cancer Society for study in all branches of the biological, chemical, and physical sciences and of clinical investigation applicable to the study of typical or malignant cancer growth.

Exchange fellowships in specialized cancer research, awarded by the American Cancer Society to United States citizens for advanced study in Great Britain.

Fellowships in the basic medical sciences, awarded by the Lilly Research Laboratories and to citizens of the United States and Canada by the Rockefeller Foundation.

Tuberculosis fellowships, granted by the National Tuberculosis Association to promote the development of investigators in tuberculosis-related fields. Applicants must be United States citizens who are graduates of American schools.

Support by the James Picker Foundation of candidates who propose to carry on research relating to the diagnostic aspects of radiology. Appointments are not limited to citizens of the United States.

Also, institutions may apply before January 1, 1954, for one or more grants to scholars in cancer research. A grant of \$18,000 by the American Cancer Society, payable over 3 years, will be made to each scholar's institution as a contribution toward his support, his research, or both.

The fellowships are generally limited to candidates under 35. Information and application blanks may be obtained from the National Research Council, 2101 Constitution Avenue, Washington 25, D. C.